The Files - RD-103, Task Order 8

28 November 1958

DOE REVIEW COMPLETED.

25X1

Joint Conference Report, AS-6

1. On 19 November 1958 a joint conference was held at 25X1 to discuss the progress of the AS-6 program. Participating in discussions concerning this project were:

25X1

Lt. Col. Carveren Anderson - AEC
Major George Ogburn - AEC

25X1

25X1 2. reported that the subcontractor's, the 25X1
25X1 and the were on time 25X1
in their work and that the program was progressing normally at 25X1
He pointed out that the power amplifier of the field unit is the stage requiring the most work. He said that monel had been selected as the outside packaging material. The use of clevite ceramic resident filters is being investigated in the field unit to lower the receiver drain and insure higher reliability. The base station components, 25X1
said, are completely on schedule. said that a test of the 25X1
antenna array to be used with the AS-6 field unit was critically needed, and requested that arrangements be made for extensive antenna testing
25X1 by no later than January. He recommended that permission be obtained from the Air Force or CAA to have a take a 25X1
5LJ receiver to a site about 1500 miles from Los Angeles and spend a few days observing signals from various types of antennas which would
25X1 be set up at The outcome of this test affects the design of the antenna matching circuits, according to , and is 25X1
considered of the greatest priority to He also requested 25X1
that we obtain frequency clearance on 6 frequencies in the 3 to 13 mc range for these tests, in which would use a 1 kilowatt CW 25X1
transmitter at Los Angeles.

25X1 3. said that a prototype of his equipment had been completed and operational tests conducted. The results of these tests were encouraging and he felt that no serious problem remained in his area of activity. (Certain technical questions regarding the environment in which his collector will have to work have been referred to 25X1
25X1 of TSS who was out of town and unable to attend this meeting.)

25X1 4. [redacted] announced that the operational sites for the two units which we hope to install in the fall of 1959 have been tentatively selected. He said that one site was a typically arctic climate with year-round permafrost, and extremely low air and ground temperatures. The other has permafrost for part of the year only, is damp, windy and rainy and has an average temperature of about 30° F. Detailed temperature profiles on each site will be furnished to the contractors as soon as they become available.
25X1 [redacted] also said that it was desired to run a full scale operational test in April of next year during which the transmitter and power supply would be buried and interrogated from a distant base station repeatedly in order to establish their reliability. It is understood that separate operational tests of the collector's system will be arranged in suitable locations by [redacted] 25X1
25X1 [redacted] pointed out that ten transmit and ten receive frequencies must be selected as soon in advance as possible of the April operational test.

5. At this point no further policy discussions were held and
25X1 Mr. [redacted] the project engineer for the AEC power supply program joined the meeting. [redacted] 25X1 described the efforts his company has made in its "crash" program to develop a suitable power supply for the AS-6. The [redacted] 25X1
25X1 [redacted] is furnishing a thermoelectric generator
25X1 to [redacted] if certain patent difficulties regarding the purchase order can be straightened out. He said that it was most important that he know the ground temperature as soon as possible and asked if it were feasible to bury the power supply at a depth greater than 6" in order to attain a more constant environmental temperature. The most efficient form factor for his power supply he said is a cube, and an 18" hole will have to be dug anyway in order to place the top of the supply 6" below the surface of the ground. [redacted] 25X1 said that another group within the Agency was investigating the possibility of making a hole in permafrost with chemical or explosive devices.
25X1 [redacted] said that because of the large amount of promethium 147 which he now expected to use to meet our power requirements a possible radiation hazard existed with the power supply, he said however, that a few extra pounds of case material would reduce it substantially.

6. Detailed discussions regarding the exact power requirements
25X1 of the [redacted] The requirements of both the collector and transmitter appear to have been lowered, since the Helpar unit now needs a basic 2 milliampere continuous drain instead of the 10 milliamperes originally allotted
25X1 it. [redacted] has eliminated the crystal oven from the field unit and feels that it will have no continuous drain whatever since the [redacted] 25X1 timer will apparently be wound during one-per-hour bursts of current.

7. At a conference held at [redacted] on 21 November 25X1
the details of the circuitry which will join the [redacted] collector 25X1
to the [redacted] transmitter were thoroughly discussed. [redacted] agreed 25X1
25X1 to provide [redacted] with an alert signal on a separate line, at least
25X1 80 milliseconds prior to the first clock pulse. This alerting signal
will be a negative going 10 VDC level change and will serve to ready
the collector for an transmission. Its supply will be adequate to
provide 15 ma to close a relay in the [redacted]box. During a discussion 25X1
of the CLEAR signal to be provided by [redacted] (upon command by the
base station), it was decided that [redacted] would furnish its own clock 25X1
pulses to clear its memory and that the CLEAR signal would consist
merely of a change in DC level, similar to the alert signal but on
a separate line. It was decided that the [redacted]mit would be 25X1
delivered with a five foot unterminated cable and that [redacted] would 25X1
select a suitable water-proof connector for it. The number of wires
in this cable was decided upon a listing of the cable functions is
noted here for purposes of record:

1.	Alert line	8.	+ 7 VDC
2.	Clock line	9.	- 7 VDC
3.	Information line	10.	-14 VDC
4.	Stop line	11.	Panic
5.	Clear line	12.	Reference Signal (if used)
6.	System ground	13.	Spare
7.	+ 14 VDC	14.	Spare
		15.	Spare

[redacted] 25X1

OC-E/R+D-EP/WJS:mjr (3 Dec. 58)
cc: R+D Subject File
R+D Lab
Monthly Report
TSS/APD
R+D Chrono
EP Chrono